No new matter is presented.

Rejection under 35 U.S.C. 112[2]

Claim 10, and claims 11-14 dependent thereon, that rejected hereunder on the grounds that the "association" of the electromagnetic interference suppressing device and the electronic device is vague and indefinite, which rejection is respectfully traversed. The rejection provides no reasons why the claim is supposedly vague or indefinite. The "association" between the two is clearly explained in the specification. MPEP 2173.05(a). Claim 10 has been amended to recite the association as attachment of the two elements, and so further explains what is disclosed in the specification. Accordingly, withdrawal of this rejection is believed to be proper.

Rejections under 35 U.S.C. 102 and 103

Claims 10, 11, 15, and 17-21 stand rejected as anticipated by, or obvious in view of, Hartman; claims 10-11 stand rejected as anticipated by, or obvious over, Goto (*et al.*) or Horie (*et al.*); claims 10-13 stand rejected as anticipated by, or obvious over, Takahashi (*et al.*); claims 12-14 stand rejected as obvious over Hartman, Horie, or Goto in view of Takahashi; and claim 16 stands rejected as obvious over Hartman in view of Ogawa or Takahashi; all rejection made on the basis of the reasons set forth in the communication of 15 November 2002. These rejections are respectfully traversed.

The Hartman Reference

Hartman discloses a flexible tape having a pressure-sensitive layer containing particles. Each particle has a ferromagnetic core and a surface layer that is electrically insulating or electrically conductive, depending on the application. The particles are magnetically attracted to form a large number of bridges extending through the thickness of the pressure sensitive layer.

Hartman only discloses a tape having a pressure-sensitive layer and iron particles, coated with an electrically conductive layer, alternatively a heat-conductive but electrically insulating layer, in the form of bridges spanning

the tape thickness, either to conduct electrical current or to conduct heat. Hartman neither discloses nor teaches any electromagnetic interference suppression.

The structure of the Hartman tape is different from that of the electromagnetic interference suppressor of the present invention, too. In the Hartman tape, iron particles are not dispersed in the pressure sensitive layer but coagulated to form bridges in which the particles contact each other. More particularly, as Hartman describes, the plastic is partially polymerized, the iron particles are dispersed in the pressure-sensitive material solution, and the solution is cast over permanent magnet strips which coagulate the particles to each other (such as the permanent magnet and process described at column 6, lines 12-16, of Hartman). Thus, the iron particles are magnetically attracted by application of an external magnetic field, all of the particles having a ferromagnetic core (optionally having an electrically conductive or electrically insulating surface) and thereby coagulated to form the bridges. Then, the pressure-sensitive material is fully photopolymerized, or cured, so that the iron particles are fixed in the form of the coagulated bridges in the cured pressure-sensitive layer. Because of the application of the magnetic field forming the bridges of particles prior to final polymerization, the partices of Hartman are not **dispersed** as required by the instant claims, but are **organized** into discrete bridge units.

Further, then, the heat conductive and electrically insulating coating on the Hartman particles (in that embodiment of Hartman) is similarly **not dispersed** as are is the heat conductive but electrically insulating particles recited in claim 10. Because that particular coating is formed on the surface of Hartman's ferromagnetic cores, and the cores are aligned into bridges, Hartman does not disclose any "dispersed" powder, but rather requires a powder organized into bridges. Even the thermally conductive and electrically insulating particles "can be magnetically attracted to form a large number of thermally conductive, electrically insulative bridges extending across the [] adhesive layer." (Column 7, lines 60-62, in Hartman.)

Accordingly, contrary to the Examiner's Response to Arguments, Hartman is limited to conductive bridges of particles, conducting either electricity or heat, depending on the coating on the ferromagnetic cores.

Therefore, claims 10-11 are not anticipated. Further, as claims 15 and 17-21 also recite that the soft magnetic powder is "dispersed", they likewise are not anticipated by the organized powder configuration of the Hartman device.

Neither are any of claims 10, 11, 15, or 17-21 rendered obvious in view of the Hartman disclosure. Applicants maintain that a dispersal of powders throughout the instant EM interference suppressing structure is antithetical to a multiplicity of bridges designed to conduct electricity or heat from one side of Hartman's tape to the other. There is no teaching or disclosure of any EM inteference suppression in Hartman's disclosure, and so such a device would not have been obvious because of Hartman's lack of such disclosure.

The Goto Reference

This reference relates to magnetic recording media. It is well known in the art that a magnetic recording tape comprises a flexible plastic carrier and at least one magnetic recoding layer coated on the carrier. The magnetic recording layer comprises a ferromagnetic powder and a binder for adhering the powder particles onto the carrier. The ferromagnetic powder is made of a hard or a semi-hard magnetic substance. The ferromagnetic substance typically has a magnetization hysteresis curve shown in Fig. 1-(a) in the Kawahara reference; it also is well known in the art that different ferromagnetic substances have different magnetization hysteresis curves.

Also well known in the art is that ferromagnetic substances are generally classified into two types according to values of the coercive force Hc. The two types are so called a "hard magnetic" substance and a "soft magnetic" substance, the former having a relatively high coercive force Hc but a relatively low permeability μ, the latter having relatively low coercive force Hc but a relatively high permeability μ. The hard magnetic substance is one typically used for a permanent magnet, and the soft magnetic substance is one typically used for a magnetic core in inductance parts such as transformers used in electric

circuits. Magnetic substances having intermediate coercive force Hc, which is not so high as in a permanent magnet and not so low as in a magnetic core, is often called a "semi-hard magnetic" substance.

For magnetic recording, it is required that the coercive force Hc as well as the residual magnetic flux density Br be relatively high compared to those of a magnetic core. This is because the magnetic recording is created by the fact that the magnetization is established by application of a magnetic field caused by a signal current and is held even after the application of the magnetic field is removed, and is not so easily erased by an external magnetic field. Accordingly, a hard magnetic or a semi-hard magnetic substance is used for the magnetic recording medium. These are commonsense materials for those skilled in the art.

A magnetic recording medium is very different from the electromagnetic interference suppressor of this invention, which uses soft magnetic powder and cannot magnetically record any electric signal. Moreover, a magnetic recording medium cannot serve as the electromagnetic interference suppressor because it may store noise signal and cannot suppress it. That is, the inherent properties of a hard magnetic material cannot be used in the present invention because those properties defeat the intended purpose of the instant device. The "intended purpose" recited for a device, even if recited only in the preamble, and especially if argued to distinguish the art, is a limitation on the structure claimed and must be considered when evaluating patentability. *Catalina Marketing International Inc. v. Coolsavings.com Inc.*, 62 USPQ2d 1781 (Fed. Cir. 2002).[1]

Goto only discusses soft magnetic particles (at cols. 9-10) in addition to the hard magentic particles in the "Magnetic Layer" discussed at cols. 5-8. Note also column four of Goto where the layered structure is discussed. The presence of

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[1] "Moreover, clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention. *See generally Bristol-Myers Squibb Co. v. Ben Venue Labs., Inc.*, 246 F.3d 1368, 1375, 58 USPQ2d 1508, 1513 (Fed. Cir. 2001) (A preamble may limit when employed to distinguish a new use of a prior art apparatus or process.)."

Id. at 1785 (underlined emphasis added).

the hard magnetic material in Goto prevents that device from anticipating the claimed invention.

As apparently discussed previously by phone between the examiner and Mr. Bashicas prior to the Response filed 29 November 2001, amendments relating to the stationary nature of the instant invention were made. Again, the statement in the rejection that intended use "does not render an article claim patentable" is legally incorrect if the intended use recited in the claim is essential for distinguishing the claimed *article* (as opposed to the structure *per se*). *E.g., STX LLC v. Brine Inc.*, 54 USPQ2d 1347 (Fed. Cir. 2000).

This is not a case where the claimed article is structurally identical to the reference articles but is used differently; this is a case where the article's intended use requires certain physical or structural characteristics that would be defeated if the reference structure were used. Accordingly, it would not have been obvious to *exclude* hard magnetic particles and thereby achieve *not* the recording medium of Goto but an EM interference suppressing device as claimed.

Returning briefly to Hartman, the iron cores of those particles comprise a hard magentic material. So the Hartman powders would not function in the present invention.

The Horie Reference

This reference discloses a magnetic core used in a reactor or transformer. It is well known in the art that a plurality of, for example, two wires are wound as primary and secondary windings or coils on the magnetic core to form the transformer. When an AC voltage is applied to the primary coil and AC current flows therethrough, magnetic fluxes flow in the magnetic core to induce AC current flowing the secondary coil. Thus, transformed AC voltage can be obtained from the secondary coil.

The magnetic core serves to transport the electric energy from the primary coil to the secondary coil by electric-magnetic conversion. Therefore, it is not desirable for the magnetic core to hold magnetization after removal of the applied magnetic field. Accordingly, the magnetic core is made of a soft magnetic substance.

As is also well known in the art, it is not desirable for the energy supplied from the primary coil to be lost in the magnetic core because such losses decrease the efficiency of transformation. Thus, in transformer design, as much energy as possible should be transported to the secondary coil. Therefore, the soft magnetic substance for the magnetic core in Horie is required to be as low as possible in magnetic loss, such as the hysteresis loss.

In contrast, in the electromagnetic interference suppressor of this invention, the soft magnetic material dissipates as heat the energy of the undesired electromagnetic waves. Therefore, the soft magnetic powder used in the electromagnetic interference suppressor has a high magnetic loss to prevent further transport of the electromagnetic waves, the opposite of the intent of Horie.

Accordingly, the magnetic core used in the inductance parts such as described by Horie cannot be used for the electromagnetic interference suppressor of this invention. Similarly, the claimed electromagnetic interference suppressor cannot be used for the magnetic core because it would reduce the efficiency of transforming.

Therefore, claims 10-11 are not anticipated by Horie because that material inherently is a low loss material, and the suppression device of this invention inherently requires a high loss material. The "intended use" of the device thus imposes structural or compositional constraints on the particular device. Similarly, claims 10-11 would not have been obvious over Horie because, as mentioned above, the two soft magetic materials have opposite magnetic loss characterics, so substituting one for the other would render the article into which the substitution was made unsuitable for its intended use. *E.g., Ex parte Cordova*, 10 USPQ2d 1949, 1950-51 (B.P.A.I. 1987) ("The issue which arises is not whether one having ordinary skill in the art would have found it *prima facie* obvious to employ Login's coated fibers to reinforce plastic composites. Rather, the issue which arises is whether the coated fibers disclosed by Login would be capable of performing a reinforcing function if embedded in plastic material.") Likewise, the issue is whether Horie's material would be "capable of peforming [the intended] function if [substituted into the claimed device]"; as shown, it would not be capable of performing the intended function.

Further, the magnetic core usually is in a form of a ring or a rod but not a sheet, as now recited in claim 10 and other claims. Therefore, the magnetic core of Horie is different in the structure from the electromagnetic interference suppressor sheet in the present invention.

The Ogawa and Takahashi References

Ogawa and Takahashi are deficient for the same reason as Goto; each reference relates to a magnetic recording medium and thus *requires* the presence of a hard (or semi-hard) magnetic material. Accordingly, those references require the presence of a hard magnetic material, which material is not suitable for the claimed EM interference suppressing device.

With respect to the rejection of claims 12-14 as obvious, based on the above disclosures the rejection should be withdrawn as well as the other rejections. Hartman discloses an multiplicity of bridges of *ordered* particles, and so does not describe a dispersion of particles in the final article; and in combination with Takahashi may make ordered bridges in a recording medium (which would probably degrade the recording characteristics of the medium). Horie cannot be combined with Takahashi because the latter requires hard magnetic materials for recording, and as mentioned a transformer coil must be a soft magnetic material with a low magnetic loss.

The foregoing also addresses other points made in the Response to Arguments section of the Office action. It is not necessary for Applicants' claims to exclude hard magnetic materials because, as shown, the presence of such materials defeats the intended purpose of the invention, what Applicants "regard as their invention" in the language of 35 U.S.C. 112. In this vein, it has been shown that the prior art structures and compositions are <u>not</u> capable of performing the intended use. Inherent in the type of suppression device claimed is absorbing the interfering EM energy, and without retaining magnetization and without further transmission of the intefering EM energy, so the material must be a soft magnetic material with a high loss. It cannot be a hard magnetic material

as described by Hartman, Goto, Takahashi, or Ogawa because the interfering noise signal might then be stored and re-radiated. It must be a soft magnetic material, but not one with a low loss, because the energy must be absorbed, not transformed as in Horie. And the soft magnetic material must be dispersed throughout the device, not arranged as in Hartman.

Accordingly, the invention recited in the present claims is significantly different from the articles in each of the references, whether taken singly or in combination, and so the rejections should now be withdrawn.

Respectfully submitted,

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4 March 2003

CERTIFICATE OF MAILING OR TRANSMISSION – 37 CFR 1.8

I hereby certify that I have a reasonable basis that this paper, along with any referred to above, (i) are being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner of Patents and Trademarks, Washington, D.C. 20231, or (ii) are being transmitted to the U.S. Patent & Trademark Office in accordance with 37 CFR § 1.6(d).

DATE: 4 March 2003

NAME: Brad Ruben

SIGNATURE: Brad Ruben

APPENDIX SHOWING MARK-UPS OF AMENDMENTS

10. (Fifth amendment.) An electronic device [comprising:] having attached thereto a stationary electromagnetic interference suppressing body for suppressing electromagnetic interference due to external and/or internal presence of electromagnetic waves, said stationary electromagnetic interference suppressing body being in the form of a sheet comprising an organic biding agent layer and a soft magnetic powder dispersed through said organic binding agent layer, [and] wherein said stationary electromagnetic interference suppressing body further [comprising] comprises a separate heat conductive but electrically insulative powder dispersed through said organic binding agent layer, for improving the thermal conductivity of said electromagnetic interference suppressing body during use thereof in association with said electronic device.

14. (Second amendment.) The electronic device of claim 13, wherein said electromagnetic interference suppressing [article] body is in the form of a sheet, for use, in contact with components to control the temperature thereof during use of said electronic device.

15. (Amended.) A combination of an electronic device, susceptible to and/or generating [magnetic] electromagnetic waves, and having adjacent thereto an electromagnetic interference suppressing article, said article comprising:

a first composite magnetic body in the form of a sheet, comprising a first soft magnetic powder and a first heat conductive powder separately dispersed through a first organic binding agent; and

an electrically conductive support in the form of a sheet, mounted on said first composite magnetic body.

16. (Amended.) The electronic device of claim 15, further comprising a second composite magnetic body in the form of a sheet, mounted on said electrically conductive support, comprising a second soft magnetic powder and a second heat conductive powder separately dispersed through a second organic binding agent.